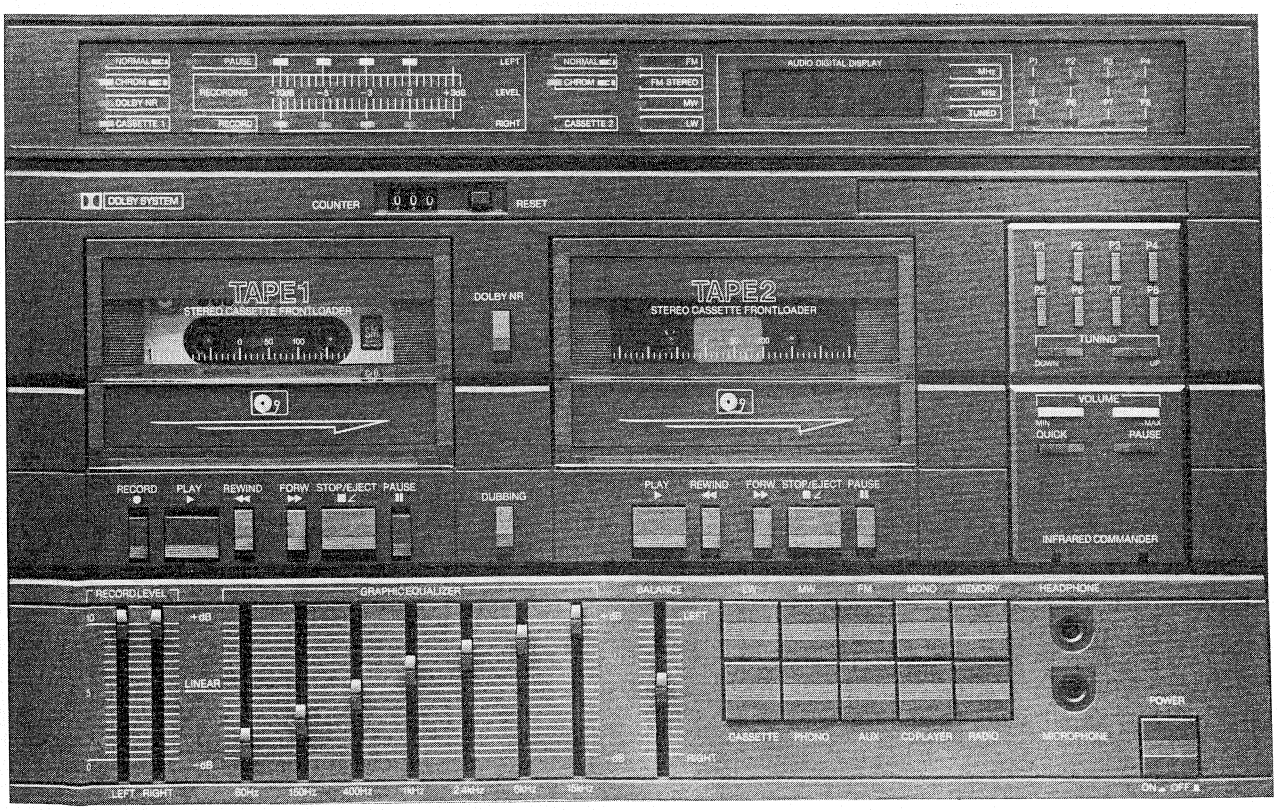
Service- und Abgleichanweisung

Ident-Nr. 25 818 00-610

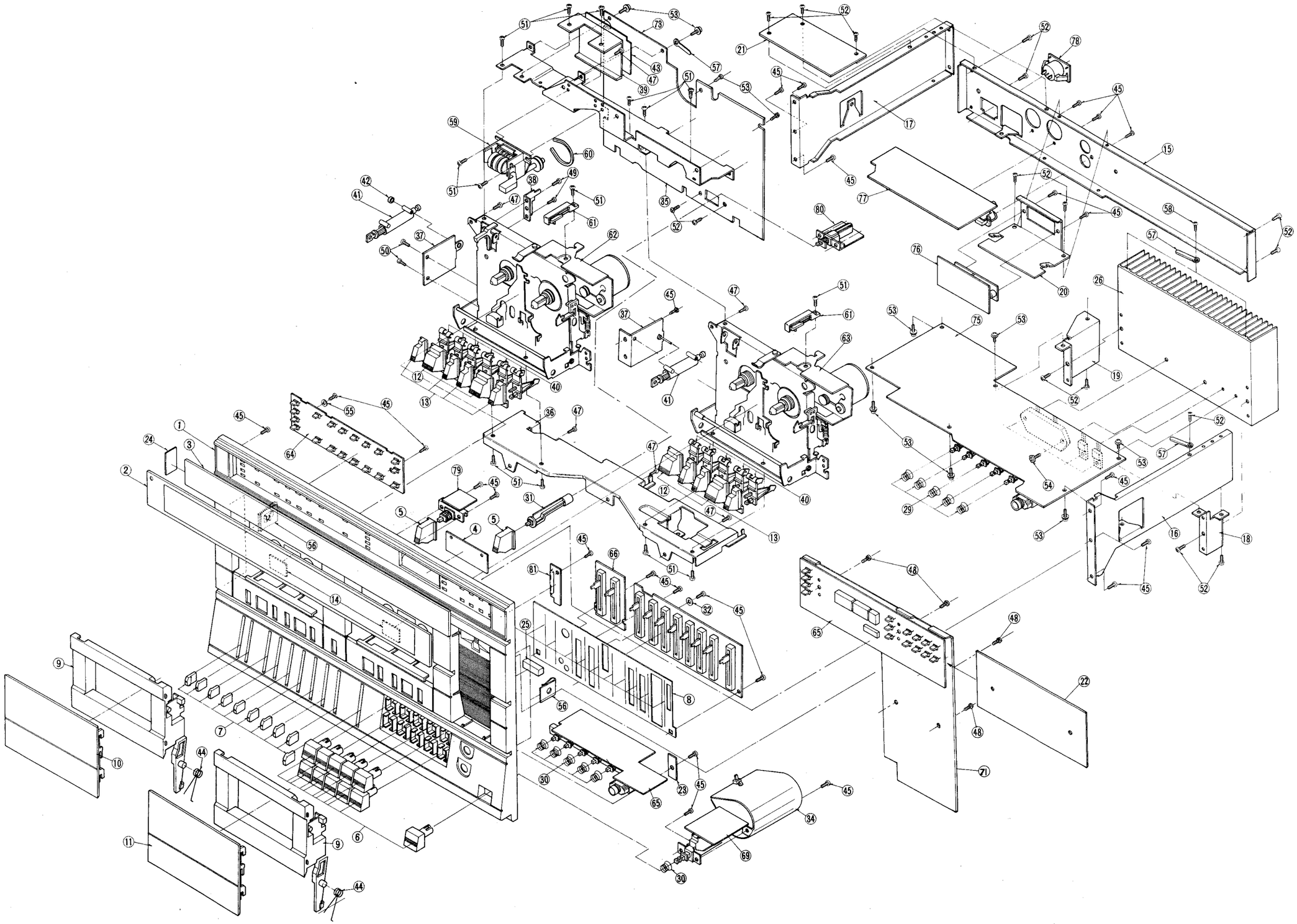
Service manual

CV 402 R



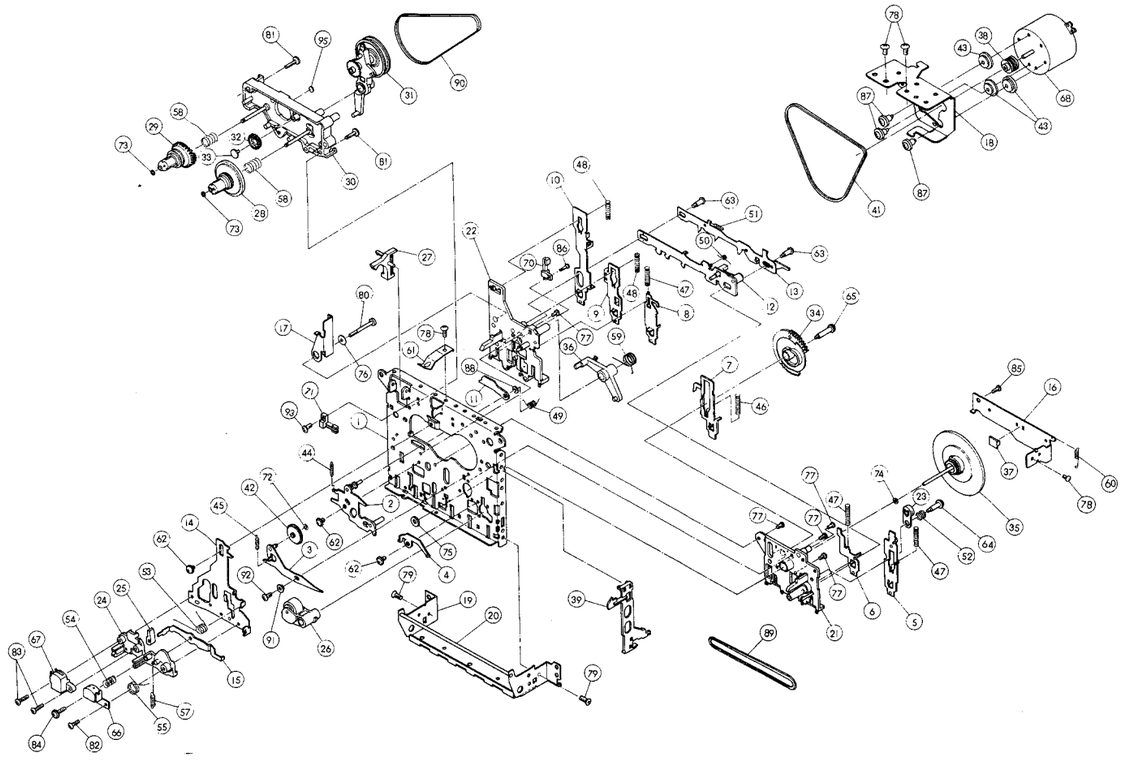
Bestell-Nr./Part No.	Bezeichnung	Description	Pos.-Nr./Ref. No.
26 743 00-431	Frontteil	Front panel	1
26 744 00-4252	Skalenabdeckung	Tinted window	2
26 745 00-4252	Anzeigescheibe	Display window	3
26 746 00-4252	Filter	Filter	4
26 747 00-4282	Knopf Taste (Dolby, dubbing)	Push button	5
26 748 00-4282	Knopf Taste 11	Push button	6
26 749 00-4284	Knopf Schieberegler	Slide knob	7
24 944 00-4312	Cassettenfachdeckel	Cassette case	9
26 750 00-431	Abdeckung Cassettenfach links	Cassette glass	10
26 751 00-431	Abdeckung Cassettenfach rechts	Cassette glass	11
24 946 00-4282	Klaviertaste breit	Cassette button L	12
24 947 00-4282	Klaviertaste schmal	Cassette button S	13
26 752 00-436	Aufkleber CR	Cassette mirror	14
26 753 00-3281	Magnet	Magnet	25
26 754 00-4161	Feder Knopf (M/S, Empf.-Bereich)	Knob spring	29
26 755 00-4161	Feder Knopf (Netz, Betriebsart)	Knob spring	30
26 756 00-428	Adapter, Dubbingschalter	Knob shaft	31
26 757 00-4165	Feder, Aufnahme	Rec spring	38
26 263 00-429	Tastenmechanik kpl.	Cassette button base	40
13 928 00-429	Fachdämpfer	Air-Bumper	41
		Washer	42
26 758 00-416	Feder Cassettenfach	Case spring	44
26 759 00-4272	Zählwerk	Counter	59
26 037 00-4152	Zählwerkriemen	Counter belt	60
26 262 00-327	Mikroschalter	Leaf switch	61
26 761 00-501	Mech. Laufwerk kpl. A/W	Cassette meca	62
26 762 00-501	Mech. Laufwerk kpl. Wiedergabe	Cassette meca	63
29 180 00-500	Anzeigeplatine Cassette	Indicator PCB cassette	64
29 181 00-500	Displayplatine Tuner	Display PCB tuner	65
26 765 00-500	Aussteuerungsreglerplatine	Rec. level-control PCB	66
26 766 00-500	Equalizerplatine	Equalizer PCB	67
29 182 00-500	Vorverstärkerplatine	Preamplifier PCB	68
26 763 00-500	Netzschalterplatine	Power switch PCB	69
29 183 00-500	IR-Empf./Synth.-Platine	IR-rec./synth. PCB	71
29 184 00-500	Recorderplatine	Recorder-PCB	73
29 185 00-500	Grundplatine	Base PCB	75
26 774 00-500	Lautsprecherbuchsenplatine	Speaker jack PCB	76
26 775 00-500	Buchsenplatine (EVV)	PCB jacks	77
26 776 00-500	Dolby-Schalterplatine	Dolby switch PCB	79
29 186 00-500	Dubbingschalterplatine	Dubbing switch PCB	80
26 778 00-500	Skalenlampenplatine	Lamp PCB	81
29 188 00-500	Netzteilplatine	Power supply unit	94
29 187 00-500	Platine, Einstellung „Tuned" Anzeige	PCB to adjust "tuned" indicator	
29 085 00-500	UKW-Teil FE 306 – G 14	FM-Tuner	
26 779 00-3243	Netztrafo	Power transformer	93
26 781 00-3502	Fernbedienungsgeber kpl.	Remote control transmitter ass'y	RC-402

Explosionsdarstellung
Exploded view



Explosionsdarstellung Cassette

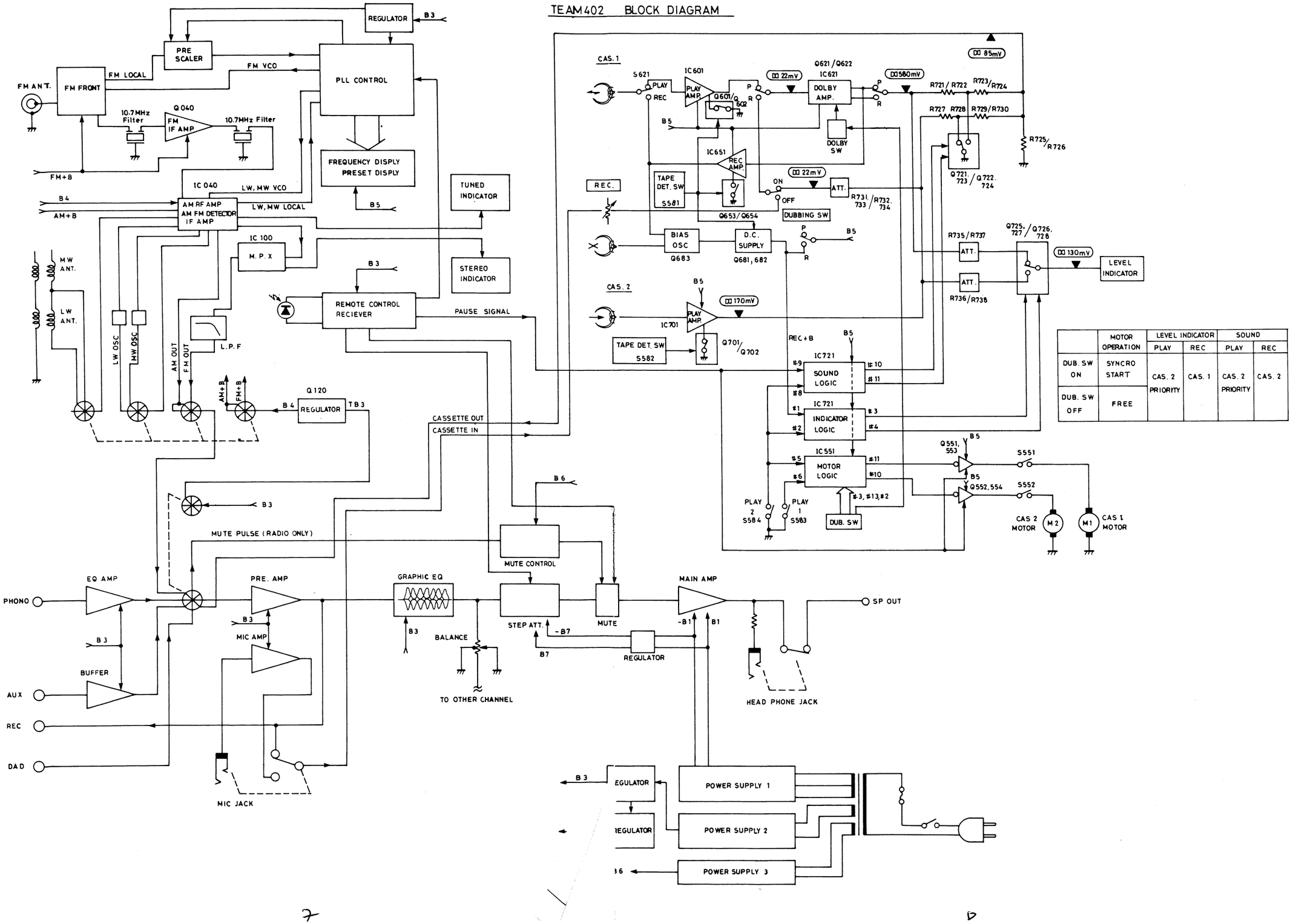
Exploded view



Bestell-Nr./Part No.	Bezeichnung	Description	Pos.-Nr./Ref. No.
26 761 00-501	Mech. Laufwerk kpl. A/W	Cassette meca	
26 762 00-501	Mech. Laufwerk kpl. Wdg.	Cassette meca	
26 841 00-4296	Schalthebel	Shift arm assembly	2
26 842 00-429	Zwischenradarm	Idler arm (HT) assembly	3
24 404 00-4296	Schalthebel Pause	Pause arm	4
24 405 00-429	Pausenrasthebel	Pause cam	23
24 406 00-429	Kopfträgerplatte	Head base	24
24 407 00-429	Stoppfühler	Sensor cap	25
26 843 00-501	Bandandruckrolle kpl.	P Roller arm assembly	26
24 409 00-4197	Aufnahmesperrhebel	Rec sensor	27
24 410 00-429	Wickelteller rechts	T Reel assembly	28
24 411 00-429	Wickelteller links	S Reel assembly	29
26 844 00-429	Wickeltellerträgerplatte	Reel base assembly	30
26 039 00-429	Rutschkupplung	Clutch arm assembly	31
24 413 00-429	Zahnrad Vorlauf	FF gear	32
24 414 00-429	Nietbolzen Zahnrad Vorlauf	Bush	33
26 845 00-429	Zahnrad Start/Stop	Gear (C)	34
26 040 00-4189	Schwungmasse	Flywheel assembly (C)	35
26 846 00-419	Rasthebel	Lock arm (H)	36
26 847 00-429	Schwungmasselager	Capstan spacer	37
26 848 00-429	Motor Pulley	Motor pulley	38
24 420 00-429	Hebel Eject	Eject lever (F)	39
26 043 00-4152	Antriebsriemen Schwungmasse	Drive belt	41
24 423 00-429	Zwischenrad	Play idler	42
24 424 00-4151	Gummipuffer	Motor cushion	43
26 849 00-416	Feder Schalthebel	Shift arm spring (C)	44
26 850 00-416	Feder Zwischenradarm	Idler spring	45
24 427 00-416	Feder Aufnahmehebel	Rec lever spring (B)	49
26 851 00-416	Feder Schalthebel	Auto arm spring	50
26 852 00-4162	Feder	Cam spring	51
26 853 00-416	Feder Pausenrasthebel	Pause cam spring	52
24 428 00-416	Feder Kopfschlitten	Head chassis spring	53
24 429 00-416	Feder A/W-Kopf	Head spring	54
26 854 00-416	Feder BA-Rolle A	R Roller spring	55
24 432 00-4162	Zugfeder Kopfschlitten	Head chassis return spring	57
24 433 00-416	Feder Wickelteller	Back tension spring	58
26 855 00-416	Feder Rasthebel	Lock arm spring	59
26 856 00-416	Feder Hebel Eject	Eject lever spring	60
24 436 00-416	Cassettenandruckfeder	Pack spring	61
26 857 00-32831	A/W-Kopf	RP Head	66
26 049 00-32831	Löschkopf	E Head	67
26 050 00-32831	Antriebsmotor	Motor	68
24 440 00-327	Schaltkontakt Motor	Leaf switch	70
26 858 00-327	Schaltkontakt Play	Leaf switch	71
26 859 00-406	Scheibe Wickelteller	Polyslider washer	73
29 082 00-406	Scheibe Schwungmasse	Polyslider washer	74
26 037 00-4152	Zählwerkriemen	Counter belt	89
26 042 00-4152	Antriebsriemen Rutschkupplung	Belt	90

Blockschaltbild

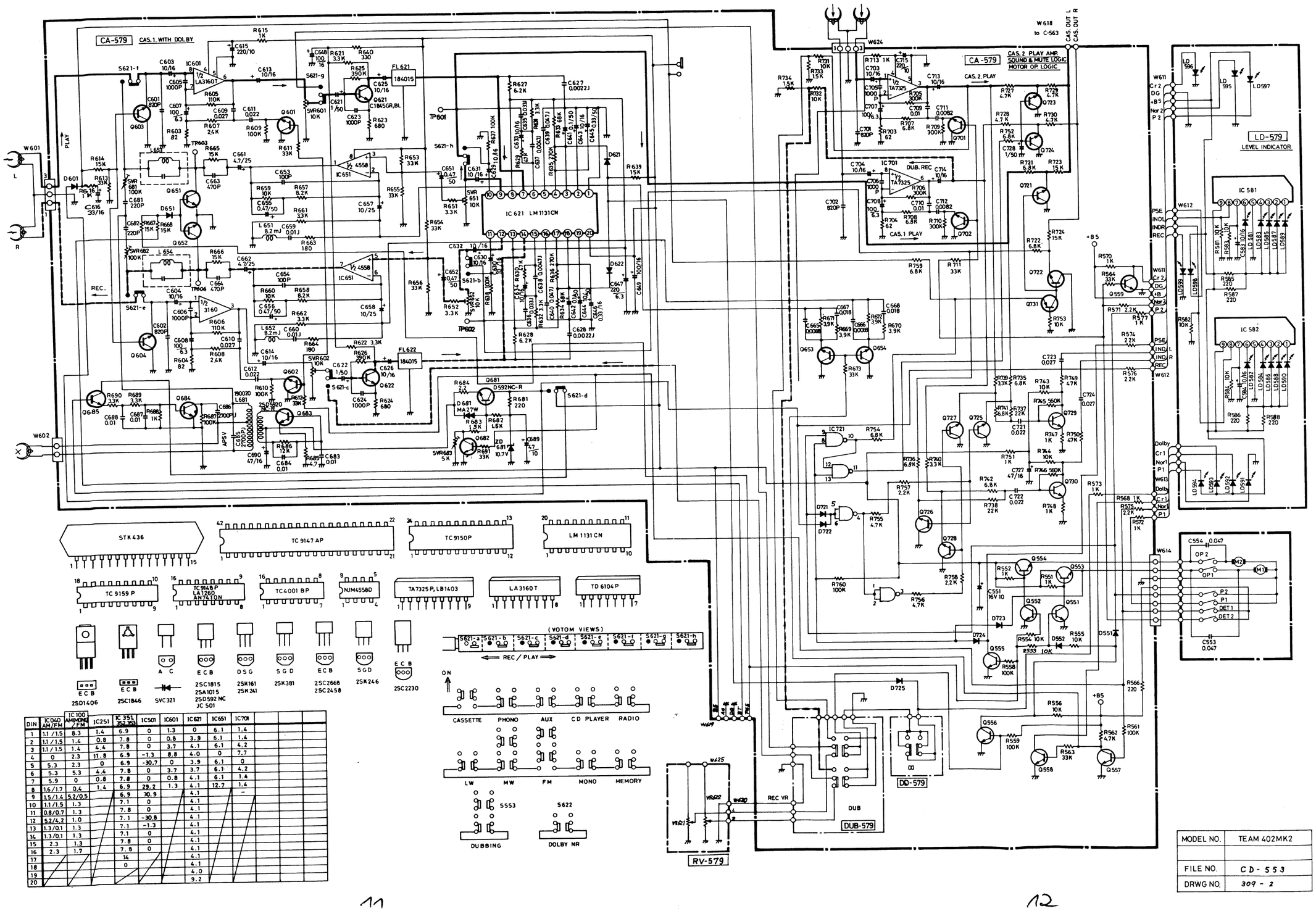
Block diagram



	MOTOR OPERATION	LEVEL INDICATOR		SOUND	
		PLAY	REC	PLAY	REC
DUB. SW ON	SYNCRO START	CAS. 2 PRIORITY	CAS. 1	CAS. 2 PRIORITY	CAS. 2
DUB. SW OFF	FREE				

Schaltbild Cassette

Circuit diagram cassette

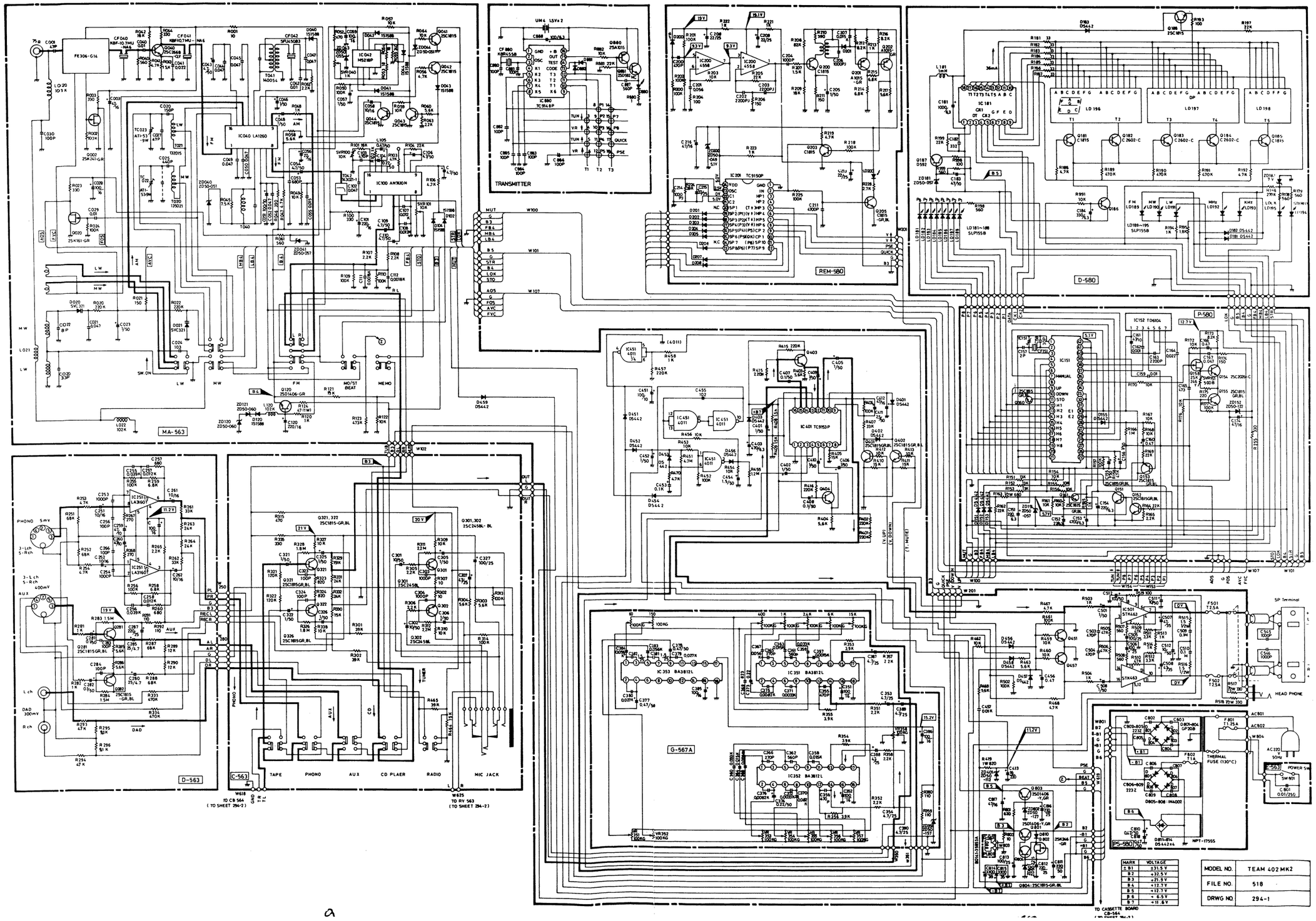


DIN	IC 040 AM/FM	IC 100 AM/MONO / FM	IC 251	IC 351, 352, 353	IC 501	IC 601	IC 621	IC 651	IC 701
1	1.1 / 1.5	8.3	1.4	6.9	0	1.3	0	6.1	1.4
2	1.1 / 1.5	1.4	0.8	7.8	0	0.8	3.9	6.1	1.4
3	1.1 / 1.5	1.4	4.4	7.8	0	3.7	4.1	6.1	4.2
4	0	2.3	11.8	6.9	-1.3	8.8	4.0	0	7.7
5	5.3	2.3	0	6.9	-30.7	0	3.9	6.1	0
6	5.3	5.3	4.4	7.8	0	3.7	3.7	6.1	4.2
7	5.9	0	0.8	7.8	0	0.8	4.1	6.1	1.4
8	1.6 / 1.7	0.4	1.4	6.9	29.2	1.3	4.1	12.7	1.4
9	1.5 / 1.4	5.2 / 0.5		6.9	30.9		4.1		–
10	1.1 / 1.5	1.3		7.1	0		4.1		
11	0.8 / 0.7	1.3		7.8	0		4.1		
12	5.2 / 4.2	1.0		7.1	-30.8		4.1		
13	1.3 / 0.1	1.3		7.1	-1.3		4.1		
14	1.3 / 0.1	1.3		7.1	0		4.1		
15	2.3	1.3		7.8	0		4.1		
16	2.3	1.7		7.8	0		4.1		
17				14			4.1		
18				0			4.1		
19							4.0		
20							9.2		

MODEL NO.	TEAM 402MK2
FILE NO.	CD - 553
DRWG NO.	309 - 2

Schaltbild Rundfunk

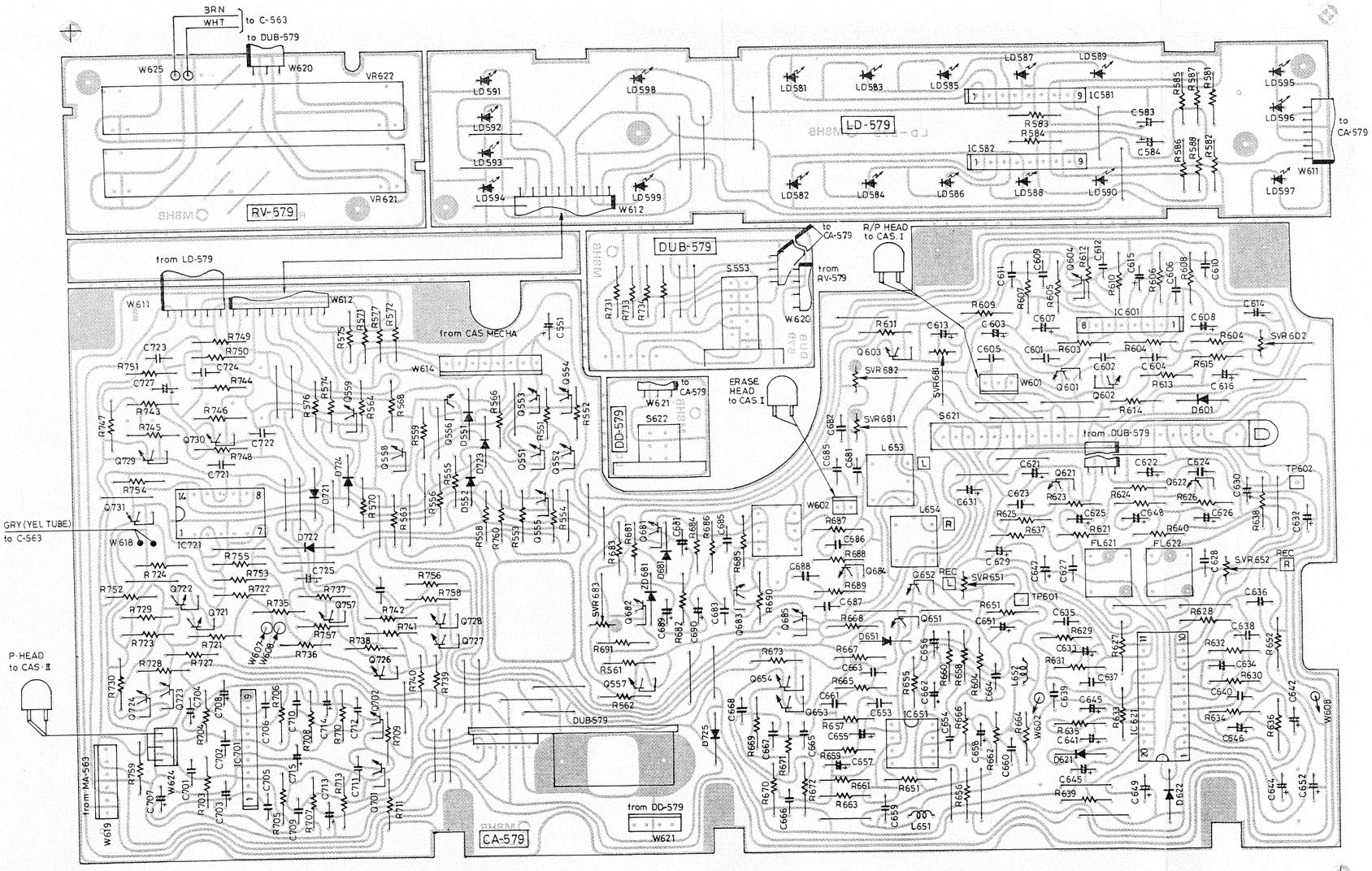
Circuit diagram receiver

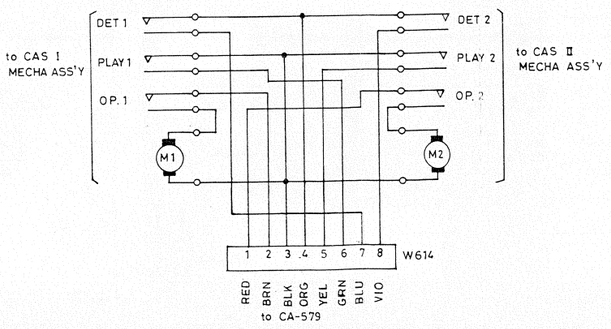


MARK	VOLTAGE
± B1	±31.5 V
B 2	+32.5 V
B 3	+21.5 V
B 4	+12.7 V
B 5	+12.7 V
B 6	+ 6.5 V
B 7	+11.6 V

Cassette Platinen

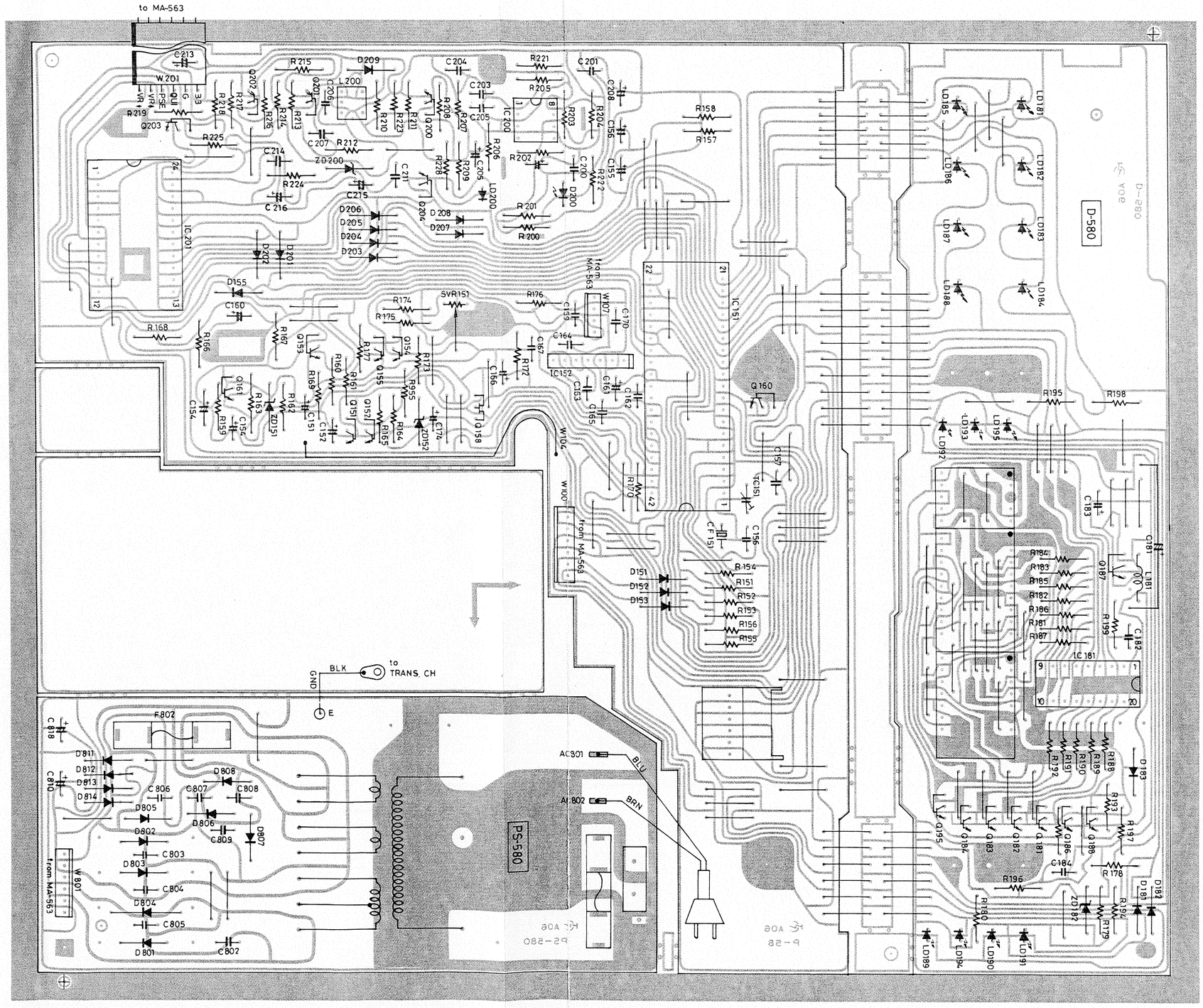
Cassette P.C.B.'s





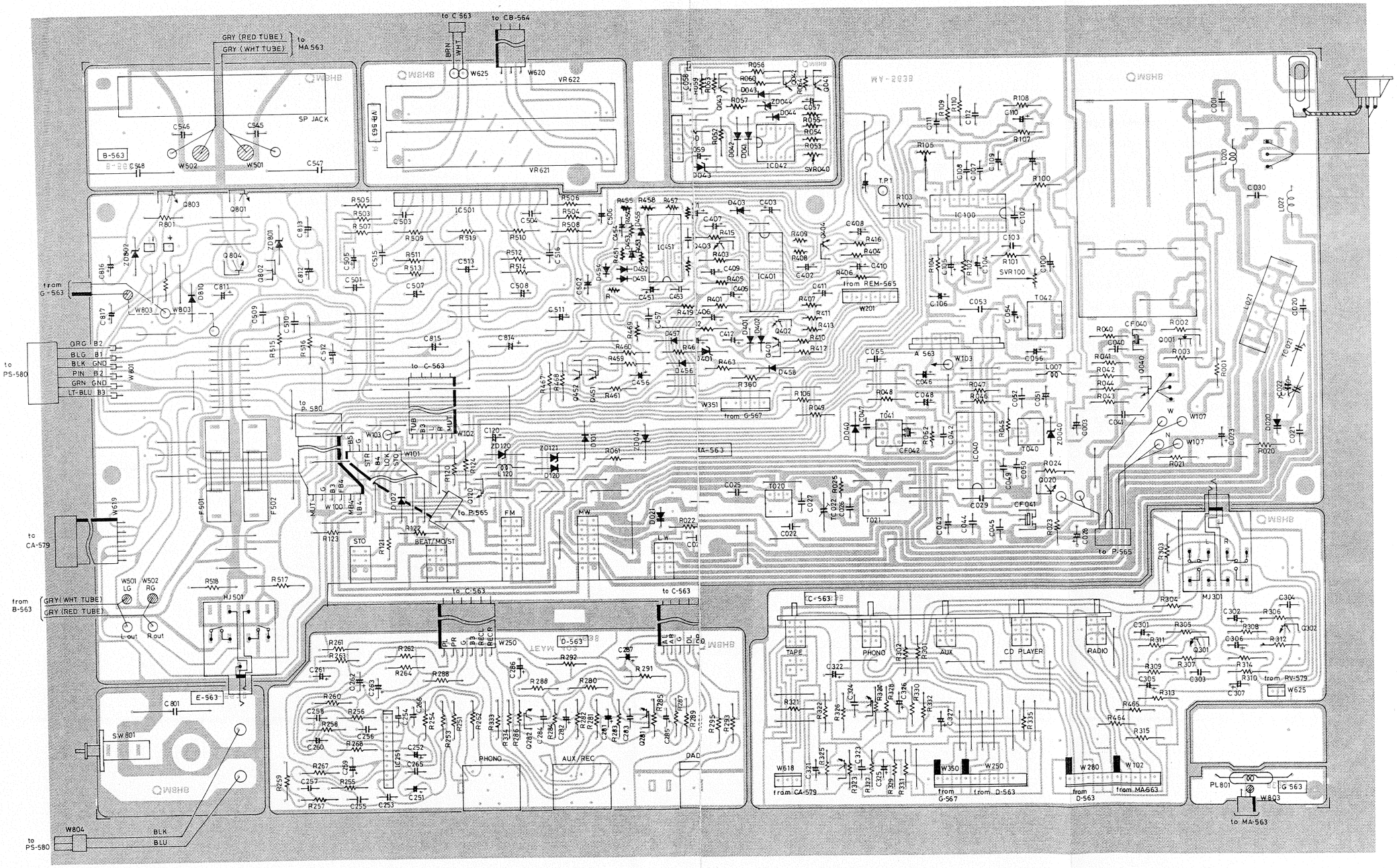
Synthesizer-, IR-Empfänger- und Display-Netzteil-Platinen

Synthesizer, IR Receiver and Display Power Supply P.C.B.'s



Rundfunkplatinen

Receiver P.C.B.'s

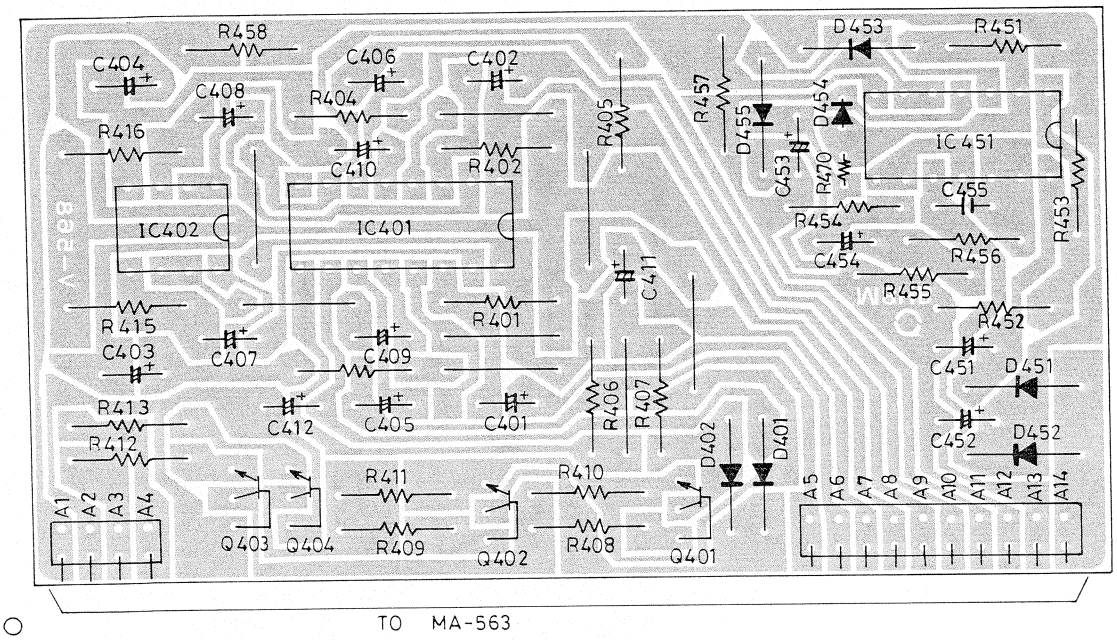


Bestell-Nr./Part No.	Bezeichnung	Description	Pos.-Nr./Ref. No.
	Filter und Spulen	**Filters and coils**	
26 822 00-3431	Ferritantenne kpl.	Loopstick ant.	L 021
26 823 00-3253	Spule Osc. MW	Coil osc. MW	T 020
26 824 00-3253	Spule Osc. LW	Coil osc. LW	T 021
26 825 00-3252	Filter Keramik 10,7 MHz	Ceramic filter 10.7 MHz	CF 040, 041
26 826 00-3252	Filter Keramik SFU 450	Ceramic filter SFU 450 B 3	CF 042
26 827 00-3252	Filter FM	FM IFT	T 040
26 828 00-3252	Filter AM	AM IFT	T 041
24 999 00-3252	Filter AM	Filter coil	T 042
26 829 00-3253	Quarz-Oszillator	Quartz oscillator	CF 151
26 830 00-3252	Filter	Filter coil	L 200
26 000 00-3252	Filterblock Cassette	Filter block	FL 621, 622
26 001 00-3252	Filterblock Cassette	Filter block	L 653, 654
26 002 00-3252	Spule Löschoszillator	Osc. coil	L 681
26 831 00-3291	Lampe Skala	Lamp	PL 801
	Schalter u. Schieberegler	**Switches and slide potentiometers**	
26 008 00-3222	Schieberegler 100 K	Slide potentiometer, Eq	VR 351–357
26 832 00-3222	Schieberegler 100 K, Bal.	Slide potentiometer, Bal.	VR 358
26 833 00-3274	A/W-Schiebeschalter	Slide switch	S 621
26 009 00-3222	Schieberegler 10 K Ausst.	Slide potentiometer	VR 621
26 009 00-3222	Schieberegler 10 K Ausst.	Slide potentiometer	VR 622
29 193 00-3276	Tastenschalter Dub	Push switch	SW 553
26 835 00-3276	Tastenschalter Dolby	Push switch	SW 622
26 836 00-327	Schaltkontakt Tape Sel.	Leaf switch	S 581/582
26 010 00-3273	Netzschalter	Power switch	SW 801
26 837 00-3276	Tastensatz 5fach, Betriebsart	Push switch	SW 301
26 838 00-3276	Tastensatz 5fach, Radio	Push switch	SW 302
	Buchsen	**Jacks**	
26 017 00-3326	Buchse Mikrofon	Mic jack	MJ 301
26 016 00-3324	Buchse Kopfhörer	Headphone jack	HJ 501
26 018 00-3322	Buchse Dioden 5-Pin.	Din jack 5 P	
26 839 00-3325	Buchse Lautsprecher	Socket 2 P	
26 019 00-3321	Buchse Antennen coax.	Socket co-axial	
26 840 00-332	Buchse Cinch	RCA jack 2 P	

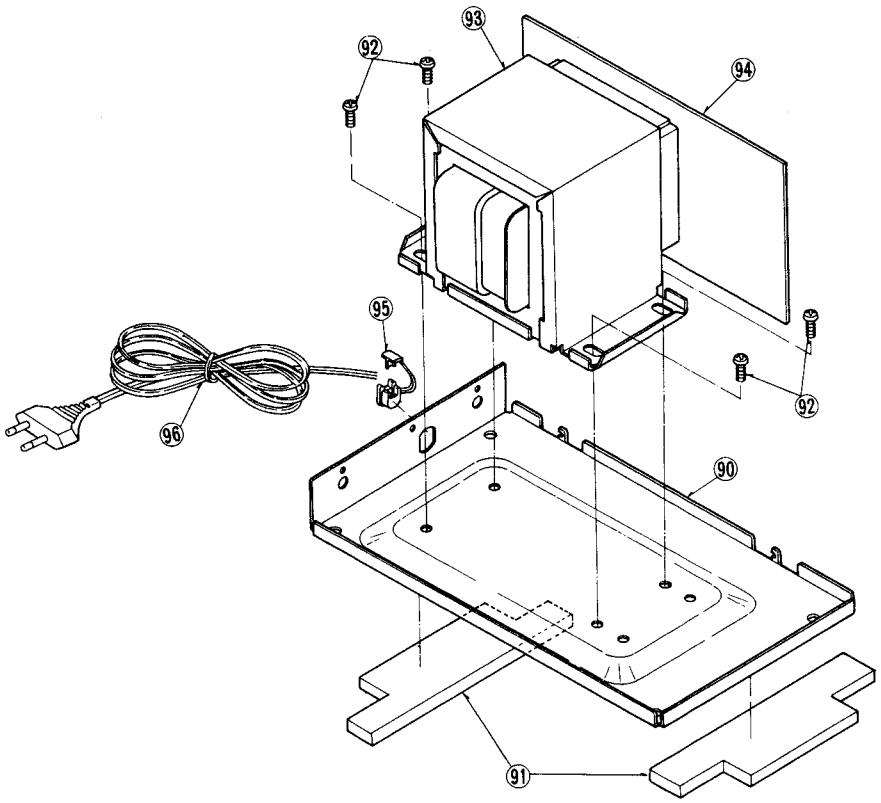
Bestell-Nr./Part No.	Bezeichnung	Description	Pos.-Nr./Ref. No.
	Transistoren	**Transistors**	
24 955 00-301	Trans 2 SK 161-GR		Q 020
26 793 00-301	Trans 2 SK 241-GR		Q 001
24 956 00-301	Trans 2 SC 2668-Y		Q 040
12 947 00-301	Trans 2 SC 1815-Y, GR		Q 041-044, 721-730
24 960 00-301	Trans 2 SD 1406-Y, GR		Q 120, 801, 803
24 959 00-301	Trans 2 SK 246-Y		Q 158
26 794 00-301	Trans 2 SC 2062-B		Q 181-184, 154
13 947 00-301	Trans 2 SD 592 NC-S		Q 187, 553, 554
13 947 00-301	Trans 2 SD 592 NC-S		Q 681, 683
12 959 00-301	Trans 2 SA 1015-GR, BL		Q 201, 731, 202
24 962 00-301	Trans 2 SC 2458 L-BL		Q 301, 302
24 961 00-301	Trans 2 SC 2230-Y, GR		Q 684
26 796 00-301	Trans 2 SK 301-R, S		Q 802
	IC's		
26 797 00-302	LA 1260		IC 040
26 798 00-302	AN 7410 N		IC 100
29 189 00-302	M 5218 P		IC 042
26 800 00-302	TC 9147 AP		IC 151
26 801 00-302	TD 6104 P		IC 152
26 802 00-302	TC 9159 P		IC 181
29 190 00-302	NJM 4559 D		IC 200
26 804 00-302	TC 9150 P		IC 201
13 943 00-302	LA 3160 T		IC 251
26 805 00-302	BA 3812 L		IC 351
26 805 00-302	BA 3812 L		IC 352
26 805 00-302	BA 3812 L		IC 353
26 806 00-302	TC 9153 P		IC 401
26 105 00-302	TC 4011 BP		IC 451
11 911 00-302	STK 463		IC 501
13 943 00-302	LA 3160 T		IC 601
26 808 00-302	LM 1131 CN		IC 621
26 803 00-302	NJM 4558 D		IC 651
13 716 00-302	TA 7325 P		IC 701
26 105 00-302	TC 4011 BP		IC 721
21 756 00-302	LB 1403		IC 581
21 756 00-302	LB 1403		IC 582
26 809 00-302	TC 9148 P		
	Dioden	**Diodes**	
22 955 00-3043	Diode SVC 321		D 020, 021
24 973 00-304	Diode 1 S 1588-AT		D 040-044
14 049 00-304	Diode DS 442-AT		
13 951 00-304	Diode MA 27 WA-AT		D 681
29 192 00-3044	Z-Diode ZD 50-055		ZD 040, 043
26 810 00-3044	Z-Diode ZD 50-051		ZD 044
24 980 00-3044	Z-Diode ZD 50-057		ZD 041, 151, 181
24 811 00-3044	Z-Diode ZD 50-060		ZD 120, 121
26 812 00-3044	Z-Diode ZD 50-070		ZD 182
24 977 00-3044	Z-Diode ZD 50-122		ZD 152
26 813 00-3044	Z-Diode ZD 50-49		ZD 200
29 814 00-3044	Z-Diode ZD 50-157		ZD 351
29 191 00-3044	Z-Diode ZD 50-112		ZD 401
26 242 00-3044	Z-Diode ZD 50-107		ZD 681
26 816 00-3044	Z-Diode ZD 50-225		ZD 801
26 817 00-3044	Z-Diode ZD 50-127		ZD 802
14 396 00-304	Diode GP 20 B		D 801–804
11 239 00-3041	Diode 1 N 4002		D 805–808
26 818 00-304	Diode B 4 B 42		D 809
26 819 00-3046	Diode IR-Empfänger TPS 703		D 200
21 746 00-3045	LED SLP 155 B (rot)		LD 181–189
21 746 00-3045	LED SLP 155 B (rot)		LD 192–195
26 820 00-3045	LED TLR 366		LD 196, 197
26 821 00-3045	LED TLR 362		LD 198
21 746 00-3045	LED SLP 155 B (rot)		LD 200
24 982 00-3045	LED SLP 455 B (gelb)		LD 581–588, 190, 191
21 746 00-3045	LED SLP 155 B (rot)		LD 589–591
21 746 00-3045	LED SLP 155 B (rot)		LD 595, 598, 599
24 982 00-3045	LED SLP 455 B (gelb)		LD 592, 594
24 982 00-3045	LED SLP 455 B (gelb)		LD 596, 597
21 747 00-3045	LED SLP 255 B (grün)		LD 593

Lautstärkeregelungsplatine

Volume control P.C.B.



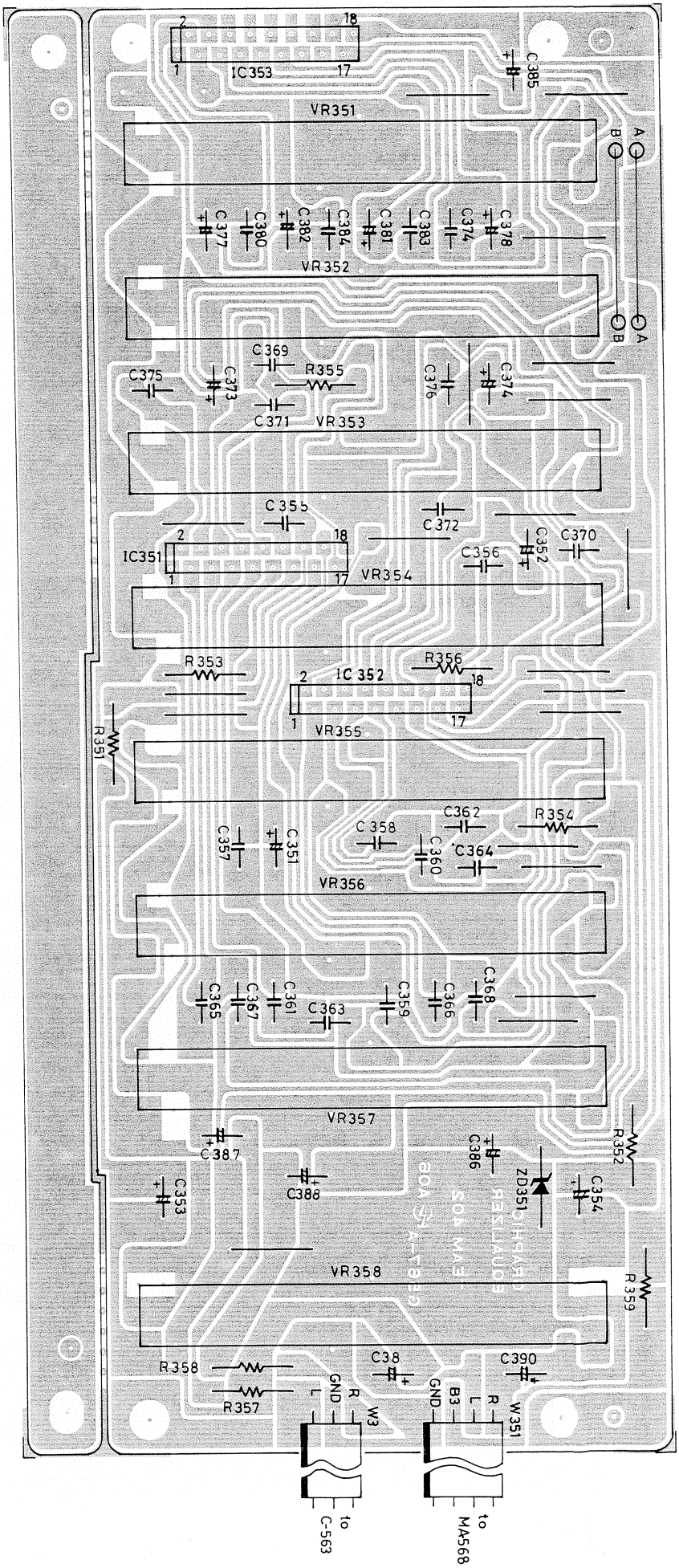
Explosionsdarstellung Trafo
Exploded view transformer



Bestell-Nr./Part No.	Bezeichnung	Description	Teile-Nr./Part No.	Pos.-Nr./Ref. No.
26 781 00-3502	Fernbedienungsgeber kpl.	Remote control transmitter ass'y	RC-402	

Equalizerplatine

Equalizer P.C.B.



Alignment procedures

Tuner

Condition

Amplitude Modulation (AM)

1. Modulation: 30%, 1KHz.
2. Input level: 74dB/m (5mV/m).
3. Generator output: IRE Loop 24 in (60cm) spacing.

Frequency Modulation (FM)

1. Modulation: 1000Hz with 40KHz.
2. Input level: 60dB (1mV).
3. Generator output: To the antenna terminal through 75Ω unbalanced dummy antenna.

Frequency Modulation (MPX)

1. Modulation: 1000Hz, L or R channel only.
   Main carrier (L + R) 40KHz, Dev.
   Sub carrier (L – R) 40KHz, Dev.
   19KHz pilot 6KHz, Dev.

Step	Signal or Sweep Generator		Tuning	Output Indicator	Adjustor	Adjust for
	Connection	Frequency		Connection		
	AM IF					
1	Set the function selector to "MW".					
2	To Loop antenna	450KHz	Low end	IF Sweep generator / R048	T041	Flat and Max.
	LW RF					
3	Set the function selector to "LW".					
4	Bobbin of LW bar Ant. must be fixed at the position of 5mm from the edge of core.					
5	TC021 must be fixed at the center position.					
6	SAME AS STEP (2)	170KHz	170KHz	RF Loop antenna / R048	T021	Max.
7	SAME AS STEP (2)	250KHz	250KHz	SAME AS STEP (6)	TC022	Max.
8	Repeat steps (6) and (7).					
	MW RF					
9	Set the function selector to "MW".					
10	Bobbin of MW bar Ant. must be fixed at the position of 5mm from the edge of core.					
11	TC020 must be fixed at the center position.					
12	SAME AS STEP (2)	603KHz	603KHz	SAME AS STEP (3)	T020	Max.
13	SAME AS STEP (2)	1404KHz	1404KHz	SAME AS STEP (3)	TC023	Max.
14	Repeat steps (12) and (13).					
	FM IF					
15	Set the function selector to "FM".					
16	Throught dummy ant.	10.7MHz	Low end	IF Sweep generator / R108	Front IFT T040	Flat and Max. "S" curve
	FM 19KHz Pilot signal					
17				Frequency counter / TP1	SVR100	19 ± 0.01KHz
	FM Separation					
18	SAME AS STEP (16)	98MHz	98MHz	SP out	SVR101	Max.
	FM Tuned IND					
19	SAME AS STEP (16)	98MHz	98MHz	Volt meter / TP2, TP3		0 ± 5mV
	PLL Low pass filter					
20			87.5MHz	Volt meter / R175	SVR151	500 ± 10mV
	PLL OSC					
21	SAME AS STEP (16)	98MHz	98MHz	SP out	TC151	THD Min.

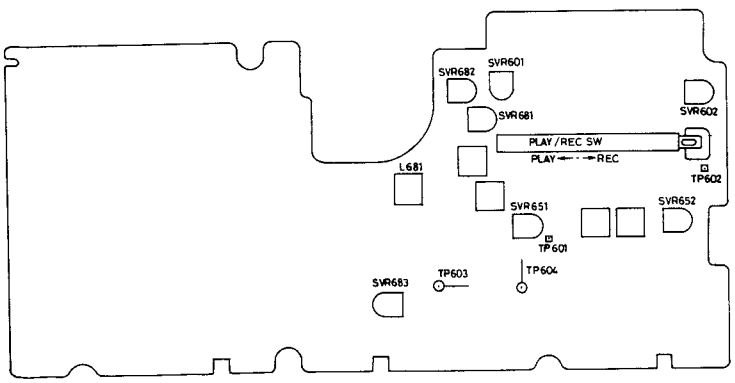
Cassette

Condition

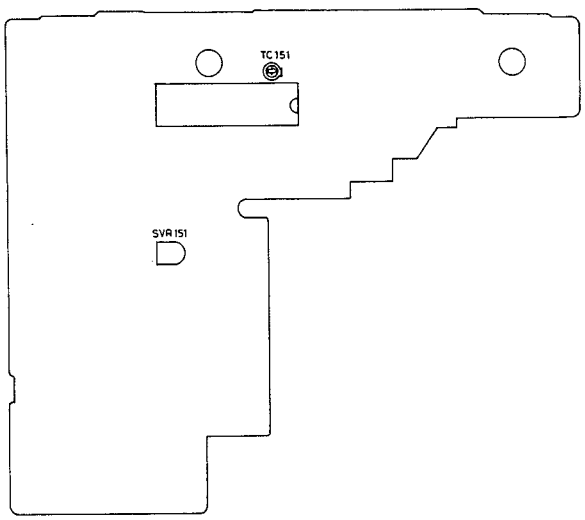
1. Dolby NR: OFF
2. Tape selector: Normal

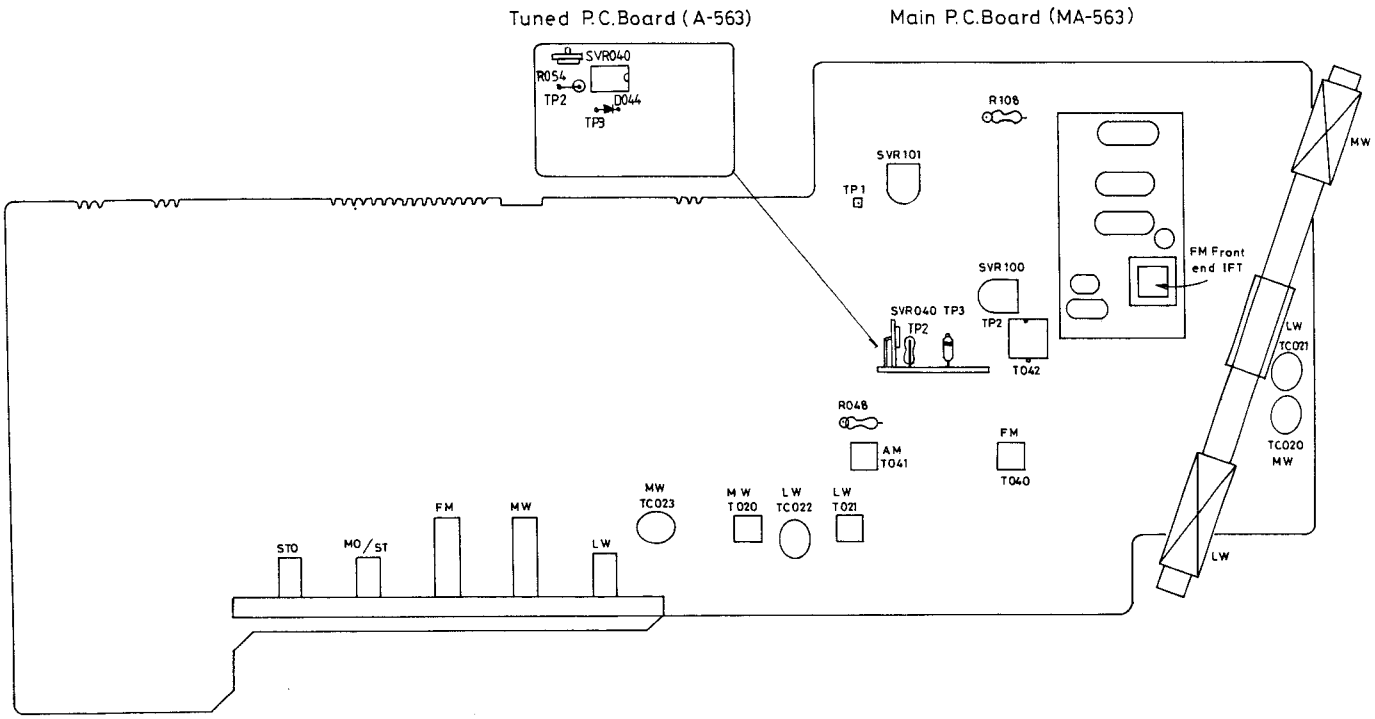
Step	INPUT SOURCE		TEST TAPE	Output Indicator Connection	Adjustor	Adjust for	Note
	Generator						
	Connection	Frequency					
HEAD AZIMUTH							
1			TCC-184C (IEC1981)	V.T.V.M. / TP601/602 (L/R)	Azimuth screw	Max.	
PLAYBACK LEVEL							
2			LCT-7001	SAME AS STEP (1)	SVR501 (L) SVR502 (R)	580mV ± 0.5dB	
BIAS TRAP							
3			Blank tape	V.T.V.M. / TP603/604 (L/R)	L681	Min.	CrO_2 : Position
RECORDING LEVEL							
4	"Tape in at" Rear Panel	400Hz	New BHF	SAME AS STEP (1)	Input level	180mV	Rec. VR max.
5	Playback (Recorded in step 4)			SAME AS STEP (1)	SVR651 (L) SVR652 (R)	180mV ± 0.3dB	
REC./PLAY FREQUENCY RESPONSE (NORMAL)							
6	SAME AS STEP (4)	400Hz	New BHF	SAME AS STEP (1)	Input level	25mV	
7	Playback (Recorded in step 6)			SAME AS STEP (1)	Note the voltage		
8	SAME AS STEP (4)	12.5KHz	New BHF	SAME AS STEP (1)	Input level	25mV	
9	Playback (Recorded in step 8)			SAME AS STEP (1)	SVR681 (L) SVR682 (R)	To the voltage obtained in step 7.	
REC./PLAY FREQUENCY RESPONSE (CrO_2)							
10	SAME AS STEP (4)	400Hz	S4592A	SAME AS STEP (1)	Input level	25mV	CrO_2 : Position
11	Playback (Recorded in step 10)			SAME AS STEP (1)	Note the voltage		
12	SAME AS STEP (4)	12.5KHz	S4592A	SAME AS STEP (1)	Input level	25mV	
13	Playback (Recorded in step 12)			SAME AS STEP (1)	SVR683	To the voltage obtained in step 11.	

Cassette Amp P.C.Board (CA-579)



PLL Control P.C.Board (P-580)




Tuned P.C.Board (A-563)
Main P.C.Board (MA-563)
SVR040
R054
TP2
D044
TP3
R108
SVR101
TP1
SVR100
FM Front end IFT
SVR040 TP3
TP2
TP2
T042
R048
AM T041
FM T040
MW TC023
MW T020
LW TC022
LW T021
FM
MW
LW
STO
MO/ST
LW TC021
TC020 MW
MW
LW